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Application No. 10/755,932

Reply to Office Action

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A manipulator for use in performing medical procedures on a portion of a body of a patient, comprising:
 - a medical tool;
 - a positioning mechanism which carries the medical tool, the positioning mechanism being capable of moving the tool with at least one degree of freedom;
 - a remote position tracking system including an electromagnetic field generator for producing a multidimensional electromagnetic field in three mutually distinguishable dimensions, the position tracking system being capable of tracking the position of the medical tool relative to a predetermined frame of reference in three dimensions as the tool is moved by the positioning mechanism, at least a portion of the remote position tracking system being arranged remotely from the positioning mechanism.
2. (Original) A manipulator according to claim 1 wherein the positioning mechanism comprises first and second arms which pivotably support the medical tool and which are movable independently of each other.
3. (Original) A manipulator according to claim 1 further including a haptic interface which communicates with a manipulator controller that directs movement of the positioning mechanism.
4. (Original) A manipulator according to claim 3 wherein the haptic interface is adapted to receive manually input position information from an operator and communicate position signals based on the position information to the manipulator controller and the manipulator controller is adapted to make predetermined adjustments to the position signals prior to directing movement of the positioning mechanism.
5. (Currently Amended) A manipulator for use in performing medical procedures on a portion of a body of a patient, comprising:

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a medical tool;

a positioning mechanism which carries the medical tool, the positioning mechanism being capable of moving the tool with at least one degree of freedom;

a remote position tracking system including an electromagnetic field generator for producing a multidimensional electromagnetic field in three mutually distinguishable dimensions, the position tracking system being capable of tracking the position of the medical tool relative to a predetermined frame of reference in three dimensions as the tool is moved by the positioning mechanism, at least a portion of the remote position tracking system being arranged remotely from the positioning mechanism;

a first remote field sensor carried by the tool for detecting the multidimensional electromagnetic field; and

a second remote field sensor carried by the positioning mechanism or the body of the patient for detecting the multidimensional electromagnetic field.

6. (Previously Presented) A manipulator according to claim 5 further including a haptic interface which communicates with a manipulator controller that directs movement of the positioning mechanism.

7. (Previously Presented) A manipulator according to claim 6 wherein the haptic interface is adapted to receive manually input position information from an operator and communicate position signals based on the position information to the manipulator controller and the manipulator controller is adapted to make predetermined adjustments to the position signals prior to directing movement of the positioning mechanism.

8. (Previously Presented) A manipulator according to claim 5 wherein the positioning mechanism comprises first and second arms which pivotably support the medical tool and which are movable independently of each other.